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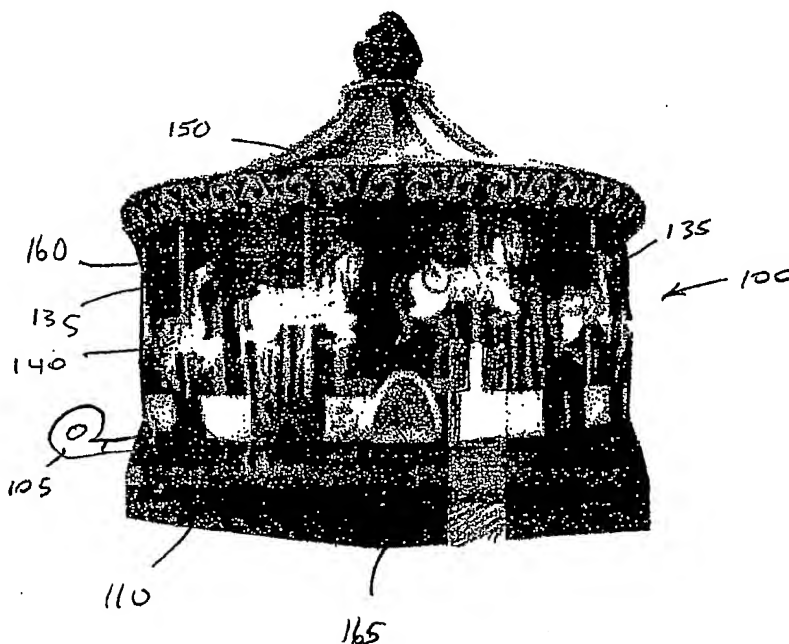
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[Continued on next page]

(54) Title: INFLATABLE HAVING AN OPEN-WEAVE MESH WALL OR WINDOW



(57) Abstract: An inflatable (100) includes an inflatable portion (135) having an inlet couplable to a blower (105) to blow air into an interior of the inflatable portion and an open weave section (160) coupled to the inflatable portion and defining a wall or a window of the inflatable. An outer surface of the open weave section includes an image (140) printed directly on the outer surface. In one option the image is a photo-quality digitally printed image having a resolution of at least 14 dpi.

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Inflatable Having an Open-Weave Mesh Wall or Window

Field

5 This invention relates to the field of entertainment devices, and more specifically to inflatables.

Background

Inflatables, such as inflatable bouncers or inflatable slides, are air-inflated devices that are used for children's amusement as well as advertising purposes.

10 Inflatables have been designed to resemble real-life objects, such as ships, fire trucks, and animals. Some inflatables include walls or windows formed of a blank mesh material. This blank mesh is typically see-through, allowing people to see in and out of the inflatable. However, the blank mesh material can take away from the overall design and appearance of the inflatable.

Summary

15 An inflatable includes an inflatable portion having an inlet couplable to a blower to blow air into an interior of the inflatable portion and an open-weave mesh section coupled to the inflatable portion and defining a wall or a window of the inflatable. A surface of the open weave section includes an image printed

20 directly on the surface. In one option, the image is a photo-quality digitally printed image having a resolution of at least 14 dpi.

Brief Description of the Drawings

FIG. 1 shows an inflatable according to one embodiment of the inventive subject matter disclosed herein.

25 FIG. 2 shows a view of a wall of the inflatable of FIG. 1.

FIG. 3 shows an inside view of the inflatable of FIG. 1.

Detailed Description

The following detailed description and accompanying drawings describe various embodiments of the inventive subject matter disclosed herein. These

30 embodiments are described in sufficient detail to enable those skilled in the art to

practice the invention. Other embodiments may be utilized and structural changes may be made without departing from the scope of the present invention.

Figure 1 shows a perspective view of an inflatable 100 according to one embodiment of the inventive subject matter disclosed herein. The inflatable
5 shown is merely a generic inflatable. Various inflatables according to embodiments of the present invention can be constructed to resemble spaceships, animals, buildings, objects, ships, etc.

Inflatable 100 includes an inflatable bottom section 110, a plurality of inflatable outer columns 135, and a roof 150. In this example, inflatable 100 is
10 used for children or adults to bounce and play inside, for instance at fairs, carnivals, or other events. A blower 105, such as a high-output blower is coupled to the inflatable to keep the inflatable inflated.

Inflatable bottom section 110 can be circular, oval, square, or rectangular section. Some embodiments omit bottom section 110 and columns 135 rest on
15 the ground to support the inflatable. In one embodiment, outer columns 135 are coupled to bottom section 110 around the periphery of the bottom section. Each of the outer columns is inflatable and made of the same material as the bottom section. In various embodiments, the outer columns can be anywhere from 5 feet to 25 feet high, for example. Roof 150 can be an uninflated fabric or an inflated
20 member. Each of the inflatable sections, such as bottom section 110 and outer columns 135, are connected together so that the interiors of the members communicate with each other so that air blown into the inflatable through the bottom section inflates each other section.

Inflatable 100 includes a mesh, or open-weave material wall 160
25 extending around the outside of the inflatable and extending between bottom section 110 and section 135 and roof 150. An outer surface of the open weave section includes one or more images 140 printed directly on the outer surface. An inner play area of inflatable 100 is accessible through a door 165 in wall 160. The open-weave mesh wall 160 is see-through and also allows air to pass in and
30 out of the inside of the structure through the open-weave material.

The open weave wall 160 is attached to sections of inflatable portions 110 and/or 135 and defines a wall or a window of the inflatable, or another decorative portion of the inflatable. Various material can be used for the wall 160. In one example, the open weave material can include a vinyl coated mesh.

5 In one embodiment, the open weave section includes holes equal to or smaller than about 1/2 inch. In one embodiment, the open weave section includes holes equal to or smaller than about 1/4 inch.

Figure 2 shows a view of wall 160. In one example, image 140 is digitally printed directly on the surface. A digitally printed image provides a

10 clear, photo-quality image on the surface of the open-weave mesh while still allowing people to see in and out of the inflatable through the open-weave material and through the image itself. In one example, the resolution of the image is at least 14 dpi. In one example the resolution of image 140 is at least 720 dpi. The printed images can be on either the outside surface, the inside

15 surface, or both surfaces of the mesh material.

Figure 3 shows an inside view of inflatable 100. Wall 160 extends around the inflatable. Bottom section 110 and columns 135 provide support. Images 140 can be seen through from the inside allowing users to see out directly through the image, while also allowing air to pass through. By printing an image

20 directly on the mesh, these advantages are realized while also improving the aesthetics of the inflatable.

To form the image on the open-weave material 160 a wide format digital printer can be used. For example, a NUR Fresco HiQ 3200 8C macroprinter can be utilized. This model printer can print up to a 3.2 meter (10.5 foot) wide

25 image. Other printers can be used for wider sizes if needed. Various embodiments provide an open-weave material 160 of between 3 feet and 8 feet long and 3 feet and 8 feet high, for example. In some examples, the image can cover only a small area of the open weave material. Some examples can provide a 10 foot wide image having a length of 12 feet or greater. In various

30 embodiments, the image can cover at least 9 square feet of the open weave

section, the image can cover at least 20 square feet of the open weave section, and the image can cover at least 36 square feet of the open weave section. Some examples cover over 100 square feet of the material with the image.

The image printed on the open weave material can be a photographic
5 image such as a face, an animal, or a nature scene. In the present example, inflatable 100 is a carousel bouncer having printed images of carousel horses on the mesh walls. Other designs can include abstract images or designs. The image can be color or black and white. Some designs can be hand-drawn designs or computer designs which are then digitally printed onto the mesh. In
10 some examples, the image is an aesthetic feature of the inflatable, providing a design to improve the appearance of the blank mesh. In other embodiments, the image can be an integral part of the inflatable. For example, the image can be a dinosaur face on a dinosaur shaped inflatable. Again, the design on wall 160 allows people to see in and out of the inflatable while providing a high-quality
15 image or design instead of a blank wall.

A method according to one embodiment includes providing an open weave material, such as an vinyl coated mesh having openings of about $\frac{1}{4}$ inch. The material can be in a sheet of 10 feet by 10 feet, for example. The material is fed through the wide format digital printer to print the image directly on the
20 material. In some embodiments, a laminate coating can be applied over the image to protect against abrasion and fading. The material is then sewn, glued, or otherwise attached to a portion of an inflatable. Two or more printed sheets can be incorporated into an inflatable making an overall design. Various embodiments utilize different types and sizes of mesh material depending on the
25 design of the inflatable.

The above description is intended to be illustrative, and not restrictive. Many other embodiments will be apparent to those of skill in the art upon reviewing the above description. The scope of the invention should, therefore, be determined with reference to the appended claims, along with the full scope
30 of equivalents to which such claims are entitled.

What is claimed is:

1. An inflatable comprising:
an inflatable portion having an inlet couplable to a blower to blow air
5 into an interior of the inflatable portion; and
an open weave section coupled to the inflatable portion and defining a
wall or a window of the inflatable, wherein a surface of the open weave section
includes an image printed directly on the surface.
- 10 2. The inflatable of claim 1, wherein the image is digitally printed on the
surface.
3. The inflatable of claim 2, wherein the image has a resolution of at least
14 dpi.
- 15 4. The inflatable of claim 2, wherein the image has a resolution of at least
720 dpi.
5. The inflatable of claim 1, wherein the open weave section extends
20 between upward extending columns of the inflatable.
6. The inflatable of claim 1, wherein the open weave section includes a
vinyl coated mesh.
- 25 7. The inflatable of claim 1, wherein the open weave section includes holes
equal to or smaller than about 1/2 inch.
8. The inflatable of claim 1, wherein the open weave section includes holes
equal to or smaller than about 1/4 inch.

30

9. An inflatable comprising:
an inflatable portion; and
an open weave section connected to the inflatable portion, the open
weave section having an image digitally printed on a surface of the open weave
5 section.
10. The inflatable of claim 9, wherein the inflatable portion includes one or
more support columns and the open weave section extends between the support
columns.
- 10 11. The inflatable of claim 9, wherein the open weave section includes a
vinyl coated mesh having holes of about ½ inch or less.
12. The inflatable of claim 9, wherein the image has a resolution of at least
15 14 dpi.
13. The inflatable of claim 9, wherein the image is a photo-quality image
having a resolution of at least 720 dpi.
- 20 14. The inflatable of claim 9, wherein the image covers at least 9 square feet
of the open weave section.
15. The inflatable of claim 14, wherein the image covers at least 36 square
feet of the open weave section.
- 25 16. A method comprising:
printing an image directly onto a surface of an open weave material; and
attaching the open weave material to one or more sections of an
inflatable.
- 30

17. The method of claim 16, wherein printing an image includes digitally printing the image.

18. The method of claim 17 wherein digitally printing the image includes
5 digitally printing a 14 dpi or greater image having a size of at least 9 square feet onto the open weave material.

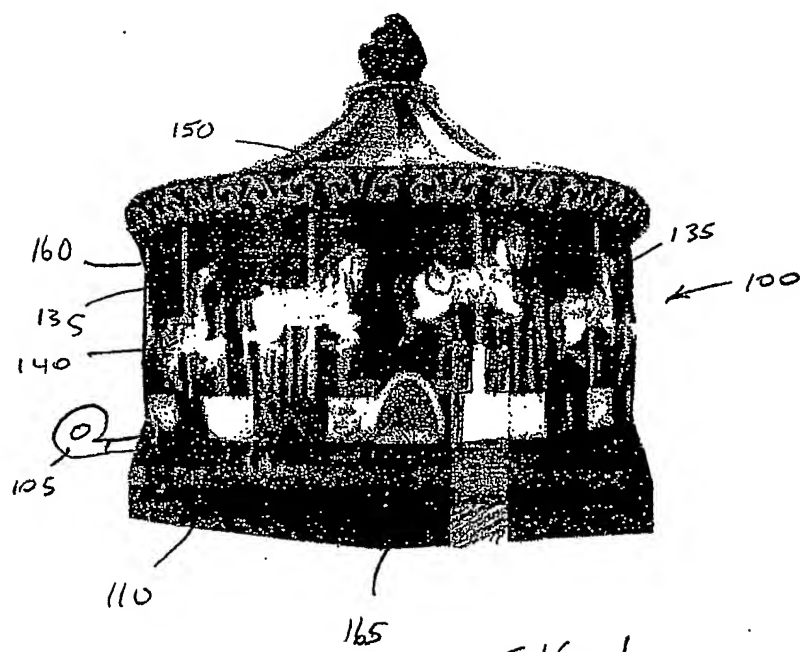
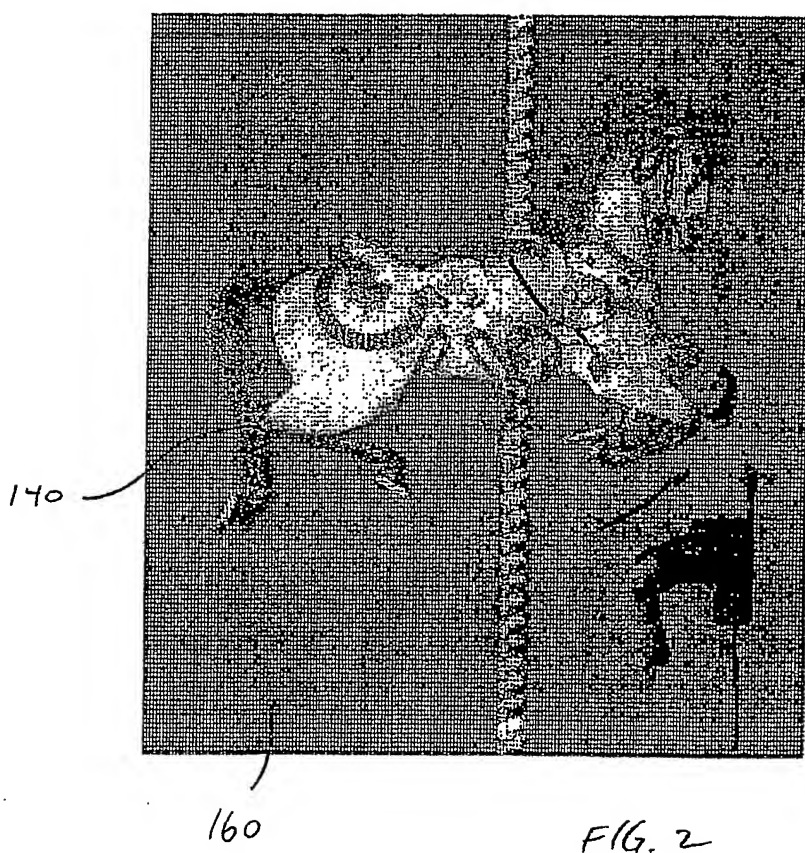
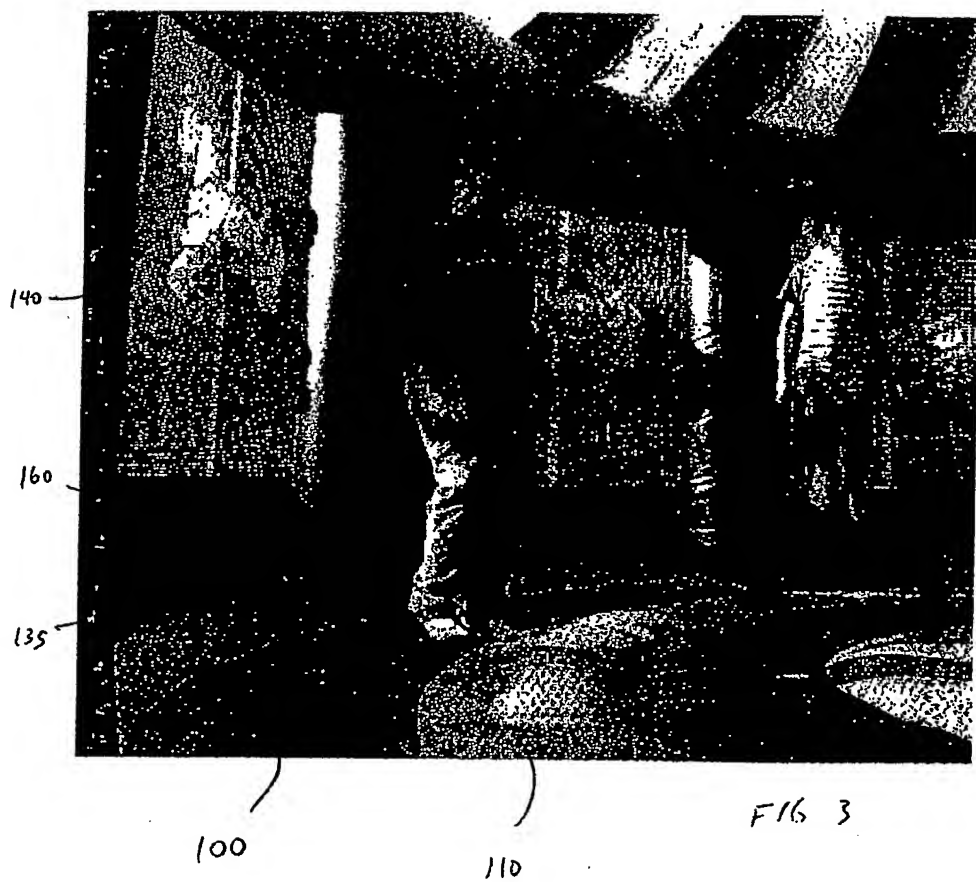


FIG. 1





INTERNATIONAL SEARCH REPORT

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A. CLASSIFICATION OF SUBJECT MATTER
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B. FIELDS SEARCHED

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Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

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C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 2002/162584 A1 (BERMAN STEPHEN) 7 November 2002 (2002-11-07)	1-5, 7-18
Y	paragraph '0015! - paragraph '0021!; figures 1-3	6
X	US 5 951 359 A (PRAKOPCYK ET AL) 14 September 1999 (1999-09-14)	1-5, 9, 13, 14, 16-18
	claims 1-12; figures 1-3	
Y	US 2003/019168 A1 (MILLER CHRIS KINGLSEY ET AL) 30 January 2003 (2003-01-30)	6
A	paragraphs '0028!, '0041!; figures 1-7	1, 9
A	US 5 462 505 A (BLAIR ET AL) 31 October 1995 (1995-10-31)	

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☒ Patent family members are listed in annex.

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INTERNATIONAL SEARCH REPORT

relation on patent family members

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